What is claimed:

1. A method of providing dynamic quality of service (QoS) in an IP network which handles IP packets and being of the type which uses RSVP (Resource Reservation Protocol) aggregation and differentiated services architecture (Diffserv), said Diffserv comprising a Diffserv domain including Border Routers (BR) and Core Routers (CR), said method comprising the steps of:

managing dynamic provisioning of QoS in each Diffserv domain by using a bandwidth broker (BB) which communicates using a predetermined protocol, and maintaining/storing RSVP aggregated states by/in the bandwidth broker to the exclusion of Border Routers.

2. A method as in claim 1 wherein the step of managing comprises using a BB which obtains resource availability information by communicating only with BRs to the exclusion of Crs, said BB also having an aggregator and deaggregator functionality.

3. A method as in claim 2, including the step of using a plurality of types of BBs and causing the BBs to interact by using RSVP aggregation.

4. A method as in claim 2, including the step of refreshing a reservation of resources, which reservation has been accomplished during a previous refreshment period, and including the step of not refreshing reserved resources in each Diffserv domain which resources have to be released in a next refreshment period.

5. A method as in claim 1 which said BB is capable of using an RSVP aggregation protocol, including the step of managing stored RSVP aggregation states, and selectively resizing an RSVP aggregated state pursuant to a new end to end RSVP request.

6. A method as in claim 1 including the step of using Load Control Protocol, and managing, by use of a BR, resource availability and admission control into Core routers and an interior of said Diffserv domain.

7. A method in claim 4 including the step of using a BB in combination with BRs managing the step of refreshing reservation of resources.

8. A method as in claim 6 wherein the BRs contain a reservation state which stores a total amount of resources which were reserved by the Load Control Protocol .

9. A method as in claim 8 wherein a BB comprises a BB Aggregator and including updating the reservation state if the BB Aggregator is requesting modification or if resource conditions in the Diffserv network including core routers, suddenly change.

10. A method as in claim 1 which additionally uses integrated services architecture (Intserv), including the step of achieving interoperability between Intserv and Diffserv by using an edge router.

11. A method as in claim 1 which additionally uses integrated service architecture (Intserv), including the step of achieving interoperability between Intserv and Diffserv by using a Bandwidth Broker Deaggregator.

12. A method as in claim 1 including the step of using Common Open Policy Services (COPS) protocol as the predetermined protocol for direct communication by the BB.

13. A method as in claim 1 including the step of using Simple Network Management Protocol (SNMP) as the predetermined protocol for direct communication by the BB.

14. In an IP network of the type which handles IP packets and uses Resource Reservation Protocol (RSVP) aggregation and differentiated services architecture (Diffserv), said Diffserv comprising a Diffserv domain including Border Routers (BR) and Core Routers (CR), a method of providing end to end quality of service (QoS) on demand, comprising the steps of: managing dynamic provisioning of QoS in each Diffserv domain by using a bandwidth broker (BB) which communicates using a predetermined protocol; and storing RSVP aggregated states in said bandwidth broker.

15. A method as in claim 1 wherein the step of managing comprises using a BB which obtains resource availability information by communicating only with BRs to the exclusion of CRs.

16. A method as in claim 15, including the step of using a plurality of types of BBs and causing BBs to interact by using RSVP aggregation.

17 A method as in claim 15, including the step of refreshing a reservation of resources, which reservation has been accomplished during a previous refreshment period.

18. A method as in claim 14 wherein said BB is capable of using an RSVP aggregation protocol, including the step of managing stored RSVP aggregation states.

19. A method as in claim 14 including the step of a border router using Load Control Protocol and its successors, and managing, by use of a BR, resource availability and admission control into core routers and an interior of said Diffserv domain.

20. A method as in claim 14 which additionally uses integrated service architecture (Intserv), including the step of achieving interoperability between Intserv and Diffserv by using an edge router, and a border router informing the BB about resources that are reserved by a Load Control Protocol and its successors.

21. A method as in claim 14 which additionally uses integrated service architecture (Intserv), including the step of

achieving interoperability between Intserv and Diffserv by using a Bandwidth Broker Deaggregator.

22. A method as in claim 14` including the step of using Common Open Policy Service (COPS) protocol as the predetermined protocol for direct communication by the BB.

23. A method as in claim 14 including the step of using Simple Network Management Protocol (SNMP) as the predetermined protocol for direct communication by the BB.

24. A bandwidth broker which operates using the method of claim 1.

25. A bandwidth broker which operates using the method of claim 11.

26. A bandwidth broker aggregator which operates using the method of claim 1.

27. A bandwidth broker aggregator which operates using the method of claim 11.

28. A bandwidth broker deaggregator which operates using the method of claim 1.

29. A bandwidth broker deaggregator which operates using the method of claim 11.

30. A border router which operates using the method of claim 1.

31. A border router which operates using the method of claim 11.

32. A core router which operates using the method of claim 1.

33. A core router which operates using the method of claim 11.

34. A differential services architecture which comprises one of a band width broker aggregator, a band width broker deaggregator, a border router, and a core router, operating using the method of claim 1.

35. A differential services architecture which comprises one of a band width broker aggregator, a band width broker deaggregator, a border router, and a core router, operating using the method of claim 11.

36. A network subsystem for providing dynamic quality of service (QoS) in an IP network which handles IP packets, the network using Resource Reservation Protocol (RSVP) aggregation and differentiated services architecture (Diffserv) including at least one Diffserv domain including Border Routers(BR) and Core Routers(CR), said network subsystem comprising a bandwidth broker (BB) which manages dynamic provisioning of QoS in each Diffserv domain, using a predetermined protocol, said bandwidth broker including stored RSVP aggregated states.

37. A network subsystem as in claim 36 wherein the Diffserv domain includes Border Routers (BRs) and Core Routers (CRs), and wherein the BB obtains resource availability information by communicating with BRs.

38. A network subsystem as in claim 37, comprising a plurality of BBs including Bandwidth Broker Aggregators and Bandwidth Broker Deaggregators controlling RSVP aggregation.

39. A network subsystem as in claim 37 wherein the BB refreshes an already made reservation of resources which reservation has been accomplished during a previous refreshment period.

40. A network subsystem as in claim 36 wherein the BB is capable of using an RSVP aggregation protocol and is able to manage RSVP aggregation states.

41. A network subsystem as in claim 36, wherein a border router is capable of using Load Control Protocol, and wherein a BR enables managing resource availability and admission control into core routers and an interior of said Diffserv domain.

42. A network subsystem as in claim 36 wherein the predetermined protocol comprises common open policy service (COPS) protocol for direct communication by the BB.

43. A network subsystem as in claim 36 wherein the predetermined protocol comprises Simple Network Management Protocol (SNMP) for direct communication by the BB.

44. A network subsystem for providing dynamically and on demand end to end Quality of Service (QoS) in an IP network, the

network using Resource Reservation Protocol (RSVP) aggregation and differentiated services architecture (Diffserv) having at least one Diffserv domain and including Border Routers (BRs) and Core Routers (CRs)as specified in claim 1, comprising: a bandwidth broker (BB) which manages dynamic provisioning of QoS in each Diffserv domain, using a predetermined protocol, said BB querying only BRs to the exclusion of CRs.

45. A network subsystem as in claim 44 wherein the BB refreshes an already made reservation of resources which reservation has been accomplished during a previous refreshment period.

46. A network subsystem as in claim 44 wherein the BB is capable of using an RSVP aggregation protocol and is able to store and manage RSVP aggregation states.

47. A network subsystem as in claim 44, which is capable of using Load Control Protocol and wherein a BR enables managing resource availability and admission control into an interior of said Diffserv domain.

48. A network subsystem as in claim 44 wherein the predetermined protocol comprises common open policy service (COPS) protocol for direct communication by the BB.

49. A network subsystem as in claim 44 wherein the predetermined protocol comprises Simple Network Management Protocol (SNMP) for direct communication by the BB.